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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,595	03/15/2001	Belford T. Coursey	MI22-1660	8140
21567	7590	12/14/2004	EXAMINER	
WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201			HOGANS, DAVID L	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/810,595	COURSEY, BELFORD T.	
	Examiner	Art Unit	
	David L. Hogans	2813	<i>[Signature]</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-30,32-37 and 48-59 is/are pending in the application.
- 4a) Of the above claim(s) 33-37,48-53,55-57 and 59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-30,32,54 and 58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7-26-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Election filed on September 23, 2004.

Election/Restrictions

1. Applicant's election with traverse of Species I/Claims 26-30, 32, 54 and 58 in the reply filed on September 23, 2004, is acknowledged. The traversal is on the ground(s) that the Application has been before the Office for three and one half years and that the Office has acted twice before on all claims. This is not found persuasive because 37 C.F.R. 1.142(a) provides that a restriction requirement, although normally made before any action on the merits, may be made at any time before final action. Therefore, since Species I and II are drawn to patentably distinct subject matter, as noted by the September 14, 2004, Restriction; the requirement is still deemed proper and is therefore made FINAL.

Furthermore, the Examiner notes that even though the dependencies of Claims 51-53 have changed from Claim 33 to Claim 26, they are still deemed within the scope of Species II because they are drawn to the inclusion of an oxygen diffusion barrier. As evidence of this concept, the September 14, 2004, Restriction detailed the reasoning for Species II was the inclusion of an oxygen diffusion barrier.

Finally, new Claim 59 depends from Claim 33 and correspondingly is a part of Species II because of the inclusion of an oxygen diffusion barrier.

2. Claims 33-37, 48-53, 55-57 and 59 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species, there being no

allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on September 23, 2004.

Status of Claims

Claims 26-30, 32, 54 and 58 are pending. Claims 33-37, 48-53, 55-57 and 59 are withdrawn. Claims 1-25, 31 and 38-47 are cancelled.

Priority

3. This application appears to be a division of Application No. 09/648,585, filed August 25, 2000. A later application for a distinct or independent invention, carved out of a pending application and disclosing and claiming only subject matter disclosed in an earlier or parent application is known as a divisional application or "division." The divisional application should set forth the portion of the earlier disclosure that is germane to the invention as claimed in the divisional application.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on July 26, 2004, is in compliance with the provisions of 37 CFR 1.97, and accordingly, has been considered by the examiner.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 26-30, 32, 54 and 58 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for capacitor storage node lower

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electrodes having topmost surfaces elevationally proximate the outermost surface of the insulative layer, does not reasonably provide enablement for capacitor storage node upper electrodes having topmost surfaces elevationally proximate the outermost surface of the insulative layer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. For instance, "capacitor storage node electrodes" (noting plurality) may refer to two lower capacitor electrodes, one lower and one upper capacitor electrode, or to two upper capacitor electrodes. Applicant's specification only enables the formation of two lower capacitor storage node electrodes having topmost surfaces elevationally proximate the outermost surface of the insulative layer, therefore, a corresponding amendment to Claim 26 reflecting such enabled disclosure is deemed necessary.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 26-30, 54 and 58 are rejected under 35 U.S.C. 102(e) as being anticipated by 6,376,304 to Matsuoka et al.

In reference to Claim 26, Matsuoka et al. teaches:

- a semiconductor substrate (1); See Figures 3-38 and columns 6-12 lines 40-15
- a plurality of word lines (4,5,6 and 7) received over the semiconductor substrate;
See Figures 3-38 and columns 6-12 lines 40-15
- an insulative layer (902) received over the word lines and the substrate, the insulative layer comprising at least a single well (see left hand side of Figure 21) formed therein, the well comprising a base received over the word lines, the well peripherally defining an outline of a memory array area (left side of Figures), area peripheral to the well comprising memory peripheral circuitry area (right side of Figures); See Figures 3-38 and columns 6-12 lines 40-15
- a plurality of memory cell storage capacitors (13) received within said single well over the word lines; See Figures 3-38 and columns 6-12 lines 40-15
- peripheral circuitry within the peripheral circuitry area operatively configured to write to and read from the memory array; See Figures 3-38 and columns 6-12 lines 40-15 and
- the insulative layer (902) has a substantially planar outermost surface, and the capacitors have capacitor storage node electrodes (13) having topmost surfaces received elevationally proximate the substantially planar outermost surface of the insulative layer (902) (See Figures 3-38 and columns 6-12 lines 40-15)

The Examiner notes that Merriam-Webster's Collegiate Dictionary (2001) defines

“proximate” as “very near : close”. Since the lower electrodes of Matsuoka et al. are

within 300 nm of the insulative layer (902), they are deemed to be elevationally “very near” or “close”.

In reference to Claim 27, Matsuoka et al. teaches:

- wherein the base is substantially planar (See Figures 3-38 and columns 6-12 lines 40-15)

In reference to Claim 28, Matsuoka et al. teaches:

- wherein the word lines have insulative caps (701) and the well base has a lowest portion which is received at least 2000 angstroms above the caps (noting that layer 901 is 200 nm) (See Figures 3-38 and columns 6-12 lines 40-15)

In reference to Claims 29 and 30, Matsuoka et al. teaches:

- buried digit lines (601A) wherein the substantially planar well base has a lowest portion which is received at least 1000 angstroms above the outermost tops of the digit lines (noting that layer 705 is 50 nm, layer 901 is 200 nm and layer 12 is 50 nm) (See Figures 3-38 and columns 6-12 lines 40-15)

In reference to Claim 54, Matsuoka et al. teaches:

- wherein individual of the capacitors have a storage node electrode, one of the storage node electrodes being spaced laterally inward of the outline peripherally

defined by the well thereby forming a space between said one electrode and said outline (noting Figure 26) (See Figures 3-38 and columns 6-12 lines 40-15)

In reference to Claim 58, Matsuoka et al. teaches:

- wherein the memory cell storage capacitors respectively comprise an outer cell electrode (14) having a topmost surface which is received elevationally outward of the insulative layer (See Figures 3-38 and columns 6-12 lines 40-15)

Response to Arguments

9. Applicant's arguments with respect to claim 26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Hogans whose telephone number is (571) 272-1691. The examiner can normally be reached on M-F (7:30-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DH

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